What is claimed is:

1. A sulfuric acid recycle apparatus for recycling sulfuric acid in a wafer cleaning fluid prepared by mixing sulfuric acid and hydrogen peroxide solution comprising:

a reaction bath having two openings formed of at least an introduction port and a discharge port for obtaining concentrated sulfuric acid by concentrating sulfuric acid in the wafer cleaning waste fluid introduced from the introduction port upon completion of a wafer cleaning process, then discharging the concentrated sulfuric acid from the discharge port;

a wafer processing bath for processing wafers; and

a supply unit for supplying the concentrated sulfuric acid to the wafer processing bath.

2. The sulfuric acid recycle apparatus according to Claim 1, wherein the reaction bath includes therein heating units for heating the wafer cleaning waste fluid and a gas discharge port for discharging a gas produced from the wafer cleaning waste fluid when it is heated by the heating unit; and

a suction unit for sucking the gas is connected to the gas discharge port.

3. The sulfuric acid recycle apparatus according to Claim 1 or 2, wherein the reaction bath includes therein a plurality of partition plates for changing an advancing direction of the wafer cleaning waste fluid, and an inclination plate positioned at a portion closer to the gas discharge port than the partition plates for allowing the concentrated sulfuric acid to flow along the surface thereof.

4. The sulfuric acid recycle apparatus according to Claim 3, wherein the inclination plate has irregularities on its surface.

5. The sulfuric acid recycle apparatus according to any of Claims 1 to 4, wherein the reaction bath has a waterdrop storage bath for preventing waterdrop attached to a ceiling surface of the reaction bath from being mixed with the concentrated sulfuric acid.

6. The sulfuric acid recycle apparatus according to any of

Claims 1 to 5, wherein fresh sulfuric acid is supplied to the concentrated sulfuric acid.

7. The sulfuric acid recycle apparatus according to any of Claims 2 to 6, wherein a heating temperature in the reaction bath ranges from 150 °C to 350 °C.

Sub A2